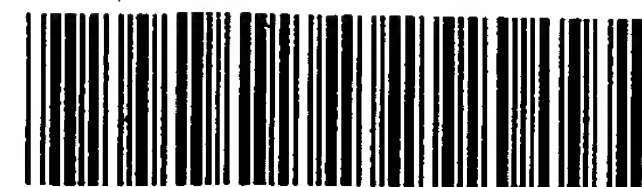


1129



#2

OIPE

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/011,859

DATE: 02/06/2002

TIME: 09:36:57

Input Set : N:\Crf3\RULE60\10011859.raw

Output Set: N:\CRF3\02062002\J011859.raw

ENTERED

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1 <110> APPLICANT: Sheppard, Paul O.
2     Jaspers, Stephen R.
3 <120> TITLE OF INVENTION: CONNECTIVE TISSUE GROWTH FACTOR HOMOLOGS
4 <130> FILE REFERENCE: 97-75
5 <140> CURRENT APPLICATION NUMBER: 10/011,859
6 <141> CURRENT FILING DATE: 2001-11-05
8 <150> PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US/09/253,316
W--> 9 <151> PRIOR FILING DATE: EARLIER FILING DATE: 1999-02-19
11 <150> PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US 60/075,300
W--> 12 <151> PRIOR FILING DATE: EARLIER FILING DATE: 1998-02-20
13 <160> NUMBER OF SEQ ID NOS: 34
14 <170> SOFTWARE: FastSEQ for Windows Version 3.0
16 <210> SEQ ID NO: 1
17 <211> LENGTH: 1142
18 <212> TYPE: DNA
19 <213> ORGANISM: Homo sapiens
20 <220> FEATURE:
21 <221> NAME/KEY: CDS
22 <222> LOCATION: (17)...(1078)
23 <400> SEQUENCE: 1.
24     ccacggtccc agcgac atg cag ggg ctc ctc ttc ccc act ctt ctg ctt gct      52
25           Met Gln Gly Leu Leu Phe Pro Thr Leu Leu Leu Ala
26           1               5               10
27     ggc ctg gca cag ttc tgc tgc agg gta cag ggc act gga cca tta gat      100
28     Gly Leu Ala Gln Phe Cys Cys Arg Val Gln Gly Thr Gly Pro Leu Asp
29           15               20               25
30     aca aca cct gaa gga agg cct gga gaa gtg tca gat gca cct cag cgt      148
31     Thr Thr Pro Glu Gly Arg Pro Gly Glu Val Ser Asp Ala Pro Gln Arg
32           30               35               40
33     aaa cag ttt tgt cac tgg ccc tgc aaa tgc cct cag cag aag ccc cgt      196
34     Lys Gln Phe Cys His Trp Pro Cys Lys Cys Pro Gln Gln Lys Pro Arg
35           45               50               55               60
36     tgc cct cct gga gtg agc ctg gtg aga gat ggc tgt gga tgc tgt aaa      244
37     Cys Pro Pro Gly Val Ser Leu Val Arg Asp Gly Cys Gly Cys Cys Lys
38           65               70               75
39     atc tgt gcc aag caa cca ggg gaa atc tgc aat gaa gct gac ctc tgt      292
40     Ile Cys Ala Lys Gln Pro Gly Glu Ile Cys Asn Glu Ala Asp Leu Cys
41           80               85               90
42     gac cca cac aaa ggg ctg tat tgt gac tac tca gta gac agg cct agg      340
43     Asp Pro His Lys Gly Leu Tyr Cys Asp Tyr Ser Val Asp Arg Pro Arg
44           95               100              105
45     tac gag act gga gtg tgt gca tac ctt gta gct gtt ggg tgc gag ttc      388
46     Tyr Glu Thr Gly Val Cys Ala Tyr Leu Val Ala Val Gly Cys Glu Phe

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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/011,859

DATE: 02/06/2002

TIME: 09:36:57

Input Set : N:\Crf3\RULE60\10011859.raw

Output Set: N:\CRF3\02062002\J011859.raw

47	110	115	120	
48	aac cag gta cat tat cat aat ggc caa gtg ttt cag ccc aac ccc ttg	436		
49	Asn Gln Val His Tyr His Asn Gly Gln Val Phe Gln Pro Asn Pro Leu			
50	125 130 135 140			
51	ttc agc tgc ctc tgt gtg agt ggg gcc att gga tgc aca cct ctg ttc	484		
52	Phe Ser Cys Leu Cys Val Ser Gly Ala Ile Gly Cys Thr Pro Leu Phe			
53	145 150 155			
54	ata cca aag ctg gct ggc agt cac tgc tct gga gct aaa ggt gga aag	532		
55	Ile Pro Lys Leu Ala Gly Ser His Cys Ser Gly Ala Lys Gly Gly Lys			
56	160 165 170			
57	aag tct gat cag tca aac tgt agc ctg gaa cca tta cta cag cag ctt	580		
58	Lys Ser Asp Gln Ser Asn Cys Ser Leu Glu Pro Leu Leu Gln Gln Leu			
59	175 180 185			
60	tca aca agc tac aaa aca atg cca gct tat aga aat ctc cca ctt att	628		
61	Ser Thr Ser Tyr Lys Thr Met Pro Ala Tyr Arg Asn Leu Pro Leu Ile			
62	190 195 200			
63	tgg aaa aaa aaa tgt ctt gtg caa gca aca aaa tgg act ccc tgc tcc	676		
64	Trp Lys Lys Lys Cys Leu Val Gln Ala Thr Lys Trp Thr Pro Cys Ser			
65	205 210 215 220			
66	aga aca tgt ggg atg gga ata tct aac agg gtg acc aat gaa aac agc	724		
67	Arg Thr Cys Gly Met Gly Ile Ser Asn Arg Val Thr Asn Glu Asn Ser			
68	225 230 235			
69	aac tgt gaa atg aga aaa gag aaa aga ctg tgt tac att cag cct tgc	772		
70	Asn Cys Glu Met Arg Lys Glu Lys Arg Leu Cys Tyr Ile Gln Pro Cys			
71	240 245 250			
72	gac agc aat ata tta aag aca ata aag att ccc aaa gga aaa aca tgc	820		
73	Asp Ser Asn Ile Leu Lys Thr Ile Lys Ile Pro Lys Gly Lys Thr Cys			
74	255 260 265			
75	caa cct act ttc caa ctc tcc aaa gct gaa aaa ttt gtc ttt tct gga	868		
76	Gln Pro Thr Phe Gln Leu Ser Lys Ala Glu Lys Phe Val Phe Ser Gly			
77	270 275 280			
78	tgc tca agt act cag agt tac aaa ccc act ttt tgt gga ata tgc ttg	916		
79	Cys Ser Ser Thr Gln Ser Tyr Lys Pro Thr Phe Cys Gly Ile Cys Leu			
80	285 290 295 300			
81	gat aag aga tgc tgt atc cct aat aag tct aaa atg att act att caa	964		
82	Asp Lys Arg Cys Cys Ile Pro Asn Lys Ser Lys Met Ile Thr Ile Gln			
83	305 310 315			
84	ttt gat tgc cca aat gag ggg tca ttt aaa tgg aag atg ctg tgg att	1012		
85	Phe Asp Cys Pro Asn Glu Gly Ser Phe Lys Trp Lys Met Leu Trp Ile			
86	320 325 330			
87	aca tct tgt gtg tgt cag aga aac tgc aga gaa cct gga gat ata ttt	1060		
88	Thr Ser Cys Val Cys Gln Arg Asn Cys Arg Glu Pro Gly Asp Ile Phe			
89	335 340 345			
90	tct gag ctc aag att ctg taaaaccaag caaatggggg aaaagttagt	1108		
91	Ser Glu Leu Lys Ile Leu			
92	350			
93	caatcctgtc atataataaa aaaattagtg agta	1142		
95	<210> SEQ ID NO: 2			
96	<211> LENGTH: 354			

RAW SEQUENCE LISTING  
 PATENT APPLICATION: US/10/011,859

DATE: 02/06/2002  
 TIME: 09:36:57

Input Set : N:\Crif3\RULE60\10011859.raw  
 Output Set: N:\CRF3\02062002\J011859.raw

```

97 <212> TYPE: PRT
98 <213> ORGANISM: Homo sapiens
99 <400> SEQUENCE: 2
100   Met Gln Gly Leu Leu Phe Pro Thr Leu Leu Leu Ala Gly Leu Ala Gln
101       1           5           10           15
102   Phe Cys Cys Arg Val Gln Gly Thr Gly Pro Leu Asp Thr Thr Pro Glu
103               20           25           30
104   Gly Arg Pro Gly Glu Val Ser Asp Ala Pro Gln Arg Lys Gln Phe Cys
105       35           40           45
106   His Trp Pro Cys Lys Cys Pro Gln Gln Lys Pro Arg Cys Pro Pro Gly
107       50           55           60
108   Val Ser Leu Val Arg Asp Gly Cys Gly Cys Cys Lys Ile Cys Ala Lys
109       65           70           75           80
110   Gln Pro Gly Glu Ile Cys Asn Glu Ala Asp Leu Cys Asp Pro His Lys
111               85           90           95
112   Gly Leu Tyr Cys Asp Tyr Ser Val Asp Arg Pro Arg Tyr Glu Thr Gly
113               100          105          110
114   Val Cys Ala Tyr Leu Val Ala Val Gly Cys Glu Phe Asn Gln Val His
115               115          120          125
116   Tyr His Asn Gly Gln Val Phe Gln Pro Asn Pro Leu Phe Ser Cys Leu
117       130          135          140
118   Cys Val Ser Gly Ala Ile Gly Cys Thr Pro Leu Phe Ile Pro Lys Leu
119       145          150          155          160
120   Ala Gly Ser His Cys Ser Gly Ala Lys Gly Gly Lys Lys Ser Asp Gln
121               165          170          175
122   Ser Asn Cys Ser Leu Glu Pro Leu Leu Gln Gln Leu Ser Thr Ser Tyr
123               180          185          190
124   Lys Thr Met Pro Ala Tyr Arg Asn Leu Pro Leu Ile Trp Lys Lys Lys
125       195          200          205
126   Cys Leu Val Gln Ala Thr Lys Trp Thr Pro Cys Ser Arg Thr Cys Gly
127       210          215          220
128   Met Gly Ile Ser Asn Arg Val Thr Asn Glu Asn Ser Asn Cys Glu Met
129       225          230          235          240
130   Arg Lys Glu Lys Arg Leu Cys Tyr Ile Gln Pro Cys Asp Ser Asn Ile
131               245          250          255
132   Leu Lys Thr Ile Lys Ile Pro Lys Gly Lys Thr Cys Gln Pro Thr Phe
133               260          265          270
134   Gln Leu Ser Lys Ala Glu Lys Phe Val Phe Ser Gly Cys Ser Ser Thr
135       275          280          285
136   Gln Ser Tyr Lys Pro Thr Phe Cys Gly Ile Cys Leu Asp Lys Arg Cys
137       290          295          300
138   Cys Ile Pro Asn Lys Ser Lys Met Ile Thr Ile Gln Phe Asp Cys Pro
139       305          310          315          320
140   Asn Glu Gly Ser Phe Lys Trp Lys Met Leu Trp Ile Thr Ser Cys Val
141               325          330          335
142   Cys Gln Arg Asn Cys Arg Glu Pro Gly Asp Ile Phe Ser Glu Leu Lys
143               340          345          350
144   Ile Leu
146 <210> SEQ ID NO: 3

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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/011,859

DATE: 02/06/2002

TIME: 09:36:57

Input Set : N:\Crf3\RULE60\10011859.raw

Output Set: N:\CRF3\02062002\J011859.raw

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147 <211> LENGTH: 1062
148 <212> TYPE: DNA
149 <213> ORGANISM: Artificial Sequence
150 <220> FEATURE:
151 <223> OTHER INFORMATION: Degenerate sequence
152 <220> FEATURE:
153 <221> NAME/KEY: misc_feature
154 <222> LOCATION: (1)...(1062)
155 <223> OTHER INFORMATION: n = A,T,C or G
156 <400> SEQUENCE: 3
W--> 157      atgcarggny tnytnnttycc nacnytnytn ytngcnggny tngcncartt ytgytgymgn      60
W--> 158      gtncarggna cnggnccnyt ngayacnacn ccngarggnm gnccnggnga rgtnwsngay      120
W--> 159      gcncncarm gnaarcartt ytgycaytgg ccntgyaart gyccncarca raarccnmgn      180
W--> 160      tgyccnccng gngtnwsnyt ngtnmgngay ggntgyggnt gytgyaarat htgygcnaar      240
W--> 161      carccnggng arathtgysaa ygargcngay ytntgygayc cncayaargg nytnntaytgy      300
W--> 162      gaytaywsng tngaymgnc nmgntaygar acnggngtnt gygcntayyt ngtnngcngtn      360
W--> 163      ggntgygart tyaaycargt ncaytaycay aayggncarg tnttycarcc naayccnytn      420
W--> 164      ttywsntgyy tntgygtngws nggngcnath ggntgyacnc cnytnnttyat hccnaarytn      480
W--> 165      gcnggnwsnc aytgywsngg ngcnaarggn ggnaaraarw sngaycarws naaytgywsn      540
W--> 166      ytngarccny tnytnarca rytnwsnacn wsntayaara cnatgccngc ntaymgnaay      600
W--> 167      ytnccnytna thtggaaaraa raartgyytn gtncargcna cnaartggac nccntgywsn      660
W--> 168      mgnacntgyg gnatgggnat hwsnaaymg ntnacnaayg araaywsnaa ytgygaratg      720
W--> 169      mgnaargara armgnytntg ytayathcar ccntgygayw snaayathyt naaracnath      780
W--> 170      aarathccna arggnaarac ntgycarccn acnttycary tnwsnaargc ngaraartty      840
W--> 171      gtnttywsng gntgywsnws nacncarwsn tayaarccna cnttytgygg nathtgyytn      900
W--> 172      gayaarmgnt gytgyathcc naayaarwsn aaratgatha cnathcartt ygaytgyccn      960
W--> 173      aaygarggnw snttyaartg gaaratgytn tggathacnw sntgygtntg ycarmgnaay      1020
W--> 174      tgymgngarc cngngngayat httywsngar ytnaarathy tn      1062

176 <210> SEQ ID NO: 4
177 <211> LENGTH: 279
178 <212> TYPE: DNA
179 <213> ORGANISM: Mus musculus
180 <400> SEQUENCE: 4
181      atccccagag gagaaacatg tcaaccact ttccaactcc ccaaagctga aaaatttgtt      60
182      ttttctggat gctcaagcac tcagagttac agaccactt tctgtggaat atgcctggac      120
183      aagagatgct gtgtcccaa caaatctaaa atgattactg ttaggtttga ctgccccagt      180
184      gaagggatcat ttaagtggca gatgctgtgg gtcacatctt gtgtgtgtca gagggactgc      240
185      agagaaccag gagatatatt ttctgagctc aggattcta      279

187 <210> SEQ ID NO: 5
188 <211> LENGTH: 93
189 <212> TYPE: PRT
190 <213> ORGANISM: Mus musculus
191 <400> SEQUENCE: 5
192      Ile Pro Arg Gly Glu Thr Cys Gln Pro Thr Phe Gln Leu Pro Lys Ala
193      1          5          10          15
194      Glu Lys Phe Val Phe Ser Gly Cys Ser Ser Thr Gln Ser Tyr Arg Pro
195      20          25          30
196      Thr Phe Cys Gly Ile Cys Leu Asp Lys Arg Cys Cys Val Pro Asn Lys
197      35          40          45

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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/011,859

DATE: 02/06/2002

TIME: 09:36:57

Input Set : N:\Crf3\RULE60\10011859.raw

Output Set: N:\CRF3\02062002\J011859.raw

```

198      Ser Lys Met Ile Thr Val Arg Phe Asp Cys Pro Ser Glu Gly Ser Phe
199          50                      55                      60
200      Lys Trp Gln Met Leu Trp Val Thr Ser Cys Val Cys Gln Arg Asp Cys
201          65                      70                      75                      80
202      Arg Glu Pro Gly Asp Ile Phe Ser Glu Leu Arg Ile Leu
203                      85                      90
205 <210> SEQ ID NO: 6
206 <211> LENGTH: 22
207 <212> TYPE: DNA
208 <213> ORGANISM: Artificial Sequence
209 <220> FEATURE:
210 <223> OTHER INFORMATION: oligonucleotide primer ZC14882
211 <400> SEQUENCE: 6
212      aacttttccc ccatttgctt gg                                22
214 <210> SEQ ID NO: 7
215 <211> LENGTH: 21
216 <212> TYPE: DNA
217 <213> ORGANISM: Artificial Sequence
218 <220> FEATURE:
219 <223> OTHER INFORMATION: oligonucleotide primer ZC14883
220 <400> SEQUENCE: 7
221      acaaaatgga ctccctgctc c                                21
223 <210> SEQ ID NO: 8
224 <211> LENGTH: 22
225 <212> TYPE: DNA
226 <213> ORGANISM: Artificial Sequence
227 <220> FEATURE:
228 <223> OTHER INFORMATION: oligonucleotide primer ZC15909
229 <400> SEQUENCE: 8
230      tcgtccaacg actataaaga gg                                22
232 <210> SEQ ID NO: 9
233 <211> LENGTH: 21
234 <212> TYPE: DNA
235 <213> ORGANISM: Artificial Sequence
236 <220> FEATURE:
237 <223> OTHER INFORMATION: oligonucleotide primer ZC14885
238 <400> SEQUENCE: 9
239      ttgctgtcgc aaggctgaat g                                21
241 <210> SEQ ID NO: 10
242 <211> LENGTH: 21
243 <212> TYPE: DNA
244 <213> ORGANISM: Artificial Sequence
245 <220> FEATURE:
246 <223> OTHER INFORMATION: oligonucleotide primer ZC15911
247 <400> SEQUENCE: 10
248      aggctgtcct ctaagcgtca c                                21
250 <210> SEQ ID NO: 11
251 <211> LENGTH: 21
252 <212> TYPE: DNA

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## VERIFICATION SUMMARY

PATENT APPLICATION: US/10/011,859

DATE: 02/06/2002

TIME: 09:36:58

Input Set : N:\Crf3\RULE60\10011859.raw

Output Set: N:\CRF3\02062002\J011859.raw

L:9 M:256 W: Invalid Numeric Header Field, Wrong Prior FILING DATE:YYYY-MM-DD  
L:12 M:256 W: Invalid Numeric Header Field, Wrong Prior FILING DATE:YYYY-MM-DD  
L:157 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:158 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:159 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:160 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:161 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:162 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:163 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:164 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:165 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:166 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:167 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:168 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:169 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:170 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:171 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:172 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:173 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:174 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:422 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23  
L:424 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23  
L:426 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23  
L:428 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23  
L:430 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23  
L:432 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23  
L:434 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23  
L:436 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23  
L:482 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24  
L:484 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24  
L:486 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24